

WE CLAIM:

1. A method for forming a capacitor, comprising:

5 providing a semiconductor;

 forming a first dielectric layer over said
 semiconductor;

10 forming a copper structure in said dielectric layer;

 forming a second dielectric layer over said copper
 structure;

15 forming a metal containing layer over said second
 dielectric layer; and

 forming a planar surface by removing portions of said
 second dielectric layer and said metal containing
20 layer.

2. The method of claim 1 wherein said second dielectric
layer consists of a material selected from the group

consisting of silicon nitride, silicon oxide, hafnium oxide, silicon oxynitride, and aluminum oxide.

3. The method of claim 2 wherein said metal containing
5 layer consists of a material selected from the group
consisting of tantalum, tantalum nitride, copper, aluminum,
titanium, and titanium nitride.

4. The method of claim 3 wherein said forming a planar
10 surface by removing portions of said second dielectric
layer and said metal containing layer comprises chemical
mechanical polishing.

5. A method for forming an integrated circuit capacitor,
comprising:

providing a semiconductor;

5

forming a first dielectric layer over said
semiconductor;

forming a copper structure in said dielectric layer;

10

forming a second dielectric layer over said copper
structure;

forming a metal containing layer over said second
dielectric layer; and

15

forming a planar surface using chemical mechanical
polishing by removing portions of said second
dielectric layer and said metal containing layer.

20

6. The method of claim 5 wherein said second dielectric
layer consists of a material selected from the group
consisting of silicon nitride, silicon oxide, hafnium
oxide, silicon oxynitride, and aluminum oxide.

7. The method of claim 6 wherein said metal containing
layer consists of a material selected from the group
consisting of tantalum, tantalum nitride, copper, aluminum,
5 titanium, and titanium nitride.

8. A method for forming an integrated circuit capacitor with copper metal, comprising:

providing a semiconductor;

5

forming a first dielectric layer over said semiconductor;

forming a copper structure in said dielectric layer;

10

forming a second dielectric layer over said copper structure;

forming a first metal containing layer over said second dielectric layer

15

forming a second metal containing layer over said first metal containing layer; and

20

forming a planar surface by removing portions of said second dielectric layer, said first metal containing layer, and said second metal containing layer.

9. The method of claim 8 wherein said second dielectric layer consists of a material selected from the group consisting of silicon nitride, silicon oxide, hafnium oxide, silicon oxynitride, and aluminum oxide.

5

10. The method of claim 9 wherein said first metal containing layer consists of a material selected from the group consisting of tantalum, tantalum nitride, copper, aluminum, titanium, and titanium nitride.

10

11. The method of claim 10 wherein said second metal containing layer consists of a material selected from the group consisting of tantalum, tantalum nitride, copper, aluminum, titanium, and titanium nitride.

15

12. The method of claim 8 wherein said forming a planar surface by removing portions of said second dielectric layer, said first metal containing layer, and said second metal containing layer comprises chemical mechanical polishing.

20